

FROM THE TRANSACTIONS OF THE ROYAL SOCIETY OF CANADA SECOND SERIES—1905-1906

VOLUME XI



Report of the Botanical Club of Canada for 1904-1905

By A. H. MacKAY, LL.D., General Secretary

(ISSUED JULY, 1905)

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XVI .- Report of the Botanical Club of Canada for 1904-5.

By the General Secretary, A. H. MACKAY, LL.L.

There was nothing striking in the history of the Club during the year. Prince Edward Island appears to have done more work than usual; British Columbia has not reported as much as usual. In Nova Scotia the public schools have been doing good work in phenology. Over three hundred accurate and full schedules of observations were sent in from as many school sections representing every county in the Province. These were referred in groups to the following phenological staff for examination, selection, and compilation; and the criticisms on faulty observations were published in the Journal of Education for the benefit of observers in future years—from page 12 to 85 of the April issue, 1905.

Region I. (Larmouth & Digby), A. W. Horner, Principal, Salem School, Yarmouth.

,, II. (Shelburne Co.), C. Stanley Bruce, Principal, Academy, Shelburne.

II. (Queens Co.), Miss M. C. Hewitt, Science Teacher,
Academy, Lunenburg.

,, II. (Lunerburg Co.), B. McKittrick, B.A., Principal, Academy, Lunenburg.

" III. (Ann. & Kings), E. Robinson, Principal, Academy, Kentville.

", IV. (Hants Co.), Miss A. Forbes, B.A., Academy, Windsor.

V. (Halifax Co.), G. R. Marshall, B.A., Principal, C.A. School, Halifax.

Waster, Academy, Halifax.

, VI. (Col. & Cum.), J. E. Barteaux, Science Master,
Academy, Truro.

", VII. (N. Cum. Co.), E. J. Lay, Principal, Academy, Amherst.

WII. (Pictou Co.), W. P. Fraser, Science Master,
Academy, Pictou.

VII. (Antigonish Co.), F. G. Morehouse, Principal, Schools, Antigonish.

VIII. (Richmond Co.), G. W. MacKenzie, B.A., Principal,
Public Schools, Sydney Mines.

WIII., IX., X. (C.B., Vic., & Inv. Co.), L. A. DeWolf, M.Sc., High School, North Sydney.

The phenochrons of each of these compilers were again averaged into the ten columns of phenochrons for each region of the Province by Miss Jean Lindsay, B.A., of the Education Department, as they are given in the first table following.

The eneral phenochrons for Nova Scotia, and the observations reported by the following observers from stations within the other Provin es of the Deminion are given in the last table:

New Brunswick: Geo. U. Hay, D.Sc., Saint John.

Prince Edward Island: John MacSwain, Charloctetown.

Prince Edward Island: J. M. Dunean, Kensington.

Ontario: Cephas Guillet, Ph.D., Ottawa. Ontario: Mrs. F. E. Webster, Creemore.

Ontario: A. B. Klugh, Guelph.

Saskatchewan: Rev. Charles W. Bryden, B.A., Shellbrook.

British Columbia: J. K. Henry, P.A., Vancouver.

It was found to be impossible hitherto to obtain reports from Yukon and Newfoundland. Several parties at the beginning of the year hoped to be able to record observations, but before the close of the season pressure of other affairs had prevented them from making a series of observations which they cared to report. But were only a half a dozen observations made, they would be of very great interest, for they would form a basis of comparison with as many objects observed in the other provinces. It is hoped we may be more successful in the future in obtaining observations representing portions of the continent from the Atlantic to the Pacific and north to the Arctic. Even should the observations be very few, they would be of very great value.

Circular and special letters were sent out to hundreds of addresses during the year, asking for co-operation in the various kinds of botanical work which may be found convenient in each locality. The exploration of the local floras is going steadily on. It is suggested, that those sending in to the General Secretary list of plants new to any locality, should have each species with the notes on it so separated on the manuscript, that each can be easily cut off to be collated by the central compiler with similar notes on the same species from other localities.

The annual meeting of the Club was held during the meeting of the Royal Society at Ottawa; the first meeting at noon on the 24th of May, 1905, and the second on the 25th May, at 4 p.m., in the Section IV. meeting room in the Normal School Building. There were present: John Macoun, G. U. Hay, James Fletcher, Professor Fowler, Dr. Burgess, Mr. Evans, and A. H. MacKay. John Macoun gave an idea of the amount of new work done since the first volume of the Catalogue

of Canadian Plants was issued, and expressed the view that the revision should not be printed until the report of the Vienna Congress on Nouran-clature should be published. The work outlined at the previous annual meeting—at Saint John, New Brunswick—was further considered, and each member present constituted a committee to stimulate the movement within his own Province and where ever an opportunity should offer. The officers of the previous year were re-elected as follows:

Honorary President: John Macoun, M.A., F.L.S., Ottawa, President: Geo. U. Hay, D.Sc., Saint John, New Brunswick. General Secretary-Treasurer: A. H. MacKay, LL.D., Halifax, Nova Scotia.

Secretaries for the Provinces:

Nova Scotia: Principal E. J. Lay, Academy, Amherst.

New Brunswick: James Vroom, Esq., St. Stephen.

Prince Edward Island: John MacSwain, Esq., Charlottetown.

Quebec: Rev. Robert Campbell, M.A., D.D., Montreal.

Ontario: James Fletcher, LL.D., F.L.S., Ottawa.

Manitoba: Rev. W. A. Burman, B.D., Winnipeg.

Assiniboia: Mr. Thos. R. Donnelly, Pheasant Forks.

Northwest Prov. and Territories: T. N. Willing, Esq., Regina.

Alberta: Percy B. Gregson, Esq., Blackfalds.

Saskatchewan: Rev. C. W. Bryden, B.A., Shellbrook.

British Columbia: J. K. Henry, B.A., High School, Vancouver.

Vancouver Island, B.C.: A. J. Pineo, B.A. High School, Victoria.

The determination of species can be most effectively made by

JAMES M. MACOUN,

Curator of the Herbarium, Geological Survey.

OTTAWA, ONT.

The Botanical Club of Canada was organized by a committee of section four of the Royal Society of Canada, at its meeting in Montreal, May 29th, 1891.

The object is to promote by concerted local efforts and otherwise, the exploration of the flera of every portion of British America, to publish complete lists of the same in local papers as the work goes on, to have these lists colle ted and carefully examined in order to arrive at a correct knowledge of the precise character of our flora and its

geographical distribution, and to carry on systematically seasonal observations on botanical phe mena.

The intention is to stimulate, with the least rossible paraphernalia of constitution or rules, increased activity among botanists in each locality, to create a corps of collecting botanists wherever there may be few or none at present, to ence rage the formation of field clubs, to publish lists of local floras in the local press, to conduct from year to year exact phenological observations, etc.; for which purposes the secretaries for the provinces me appoint secretaries for counties or die ts, who will be expected, in tike manner, to transmit the same im this to as many as possible in their more local spheres of action.

Members and secretaries, while carrying out plans of operation which they may find to be promising of success in their particular districts, will report as frequently as convenient to the officer under whom

they may be immediately acting.

Before the end of January, at the latest, reports of the work done within the various provinces during the year ended December the 31st previous, should be made by the secretaries for the provinces to the general secretary, from which the annual report to the Royal Society shall be principally compile By the first of January, therefore, the annual reports of county secretaries and members should be sent in to the secretaries of the provinces.

To cover the expenses of official printip; and postage, a rominal fee of twenty-five cents per annum is expector membership (or one dollar for five years in advance, or five doll for life membership). Secretaries for the provinces, when remitting the amount of fees from members to the general treasurer, are authorized to deduct the necessary expenses for provincial office work, transmitting vouchers for the same with the balance.

The names of those reporting any kind of valuable botanical work during the year will be published in the list of active members, even should the payment of fees be forgotten. All payments are credited to the current year and the future. Lapsed active membership can, therefore, be restored at any time without the payment of arrears.

FLOWERING AND TOTHER PHENOCHRONS FOR EACH REGION OF THE PROVINCE OF NOVA SCOTIA, COMPILED FROM 300 PUBLIC SCHOOL OBSERVATION SCHEDULES

				-0-											
	1	Gulf.	1 '0'		113.5	7 197 4	2 195 K			0.00	28. R	: :	0.0416	2.161	176.4
		ras d'Or Slope (Inv.	9. B		2	4 193 7					130.4 130.4 138.2			1.10	IQ.
		ichmond and Cape Breton.	н .8		194		36		. 0	30.		30.	40 6 194	2	3. 5.
MON.		Pictou and Antig.	N '2	Tolly	:	. 00	34.7	132.1	4 133 6 135	26		7 139 7 130 7 130	27 2 140		20.03
BECOMING COMMON		outh Cobequid Slope (S. Cumb. and Col.)	8.8	1		124.3		130.	2 132 4	6 134		21 7	135 9 137		1 139 2 139 3 141 5 140
COMIN	REGIONS.	orodsynD bns xalilal	2. E	12114	2 131 5	7119.8	145.2	3 138	6			. «			
	A	fants and South Colchester,	I 'P	15.4		116.7		63	30.21	33.5 138	134	2 132 1 197	32.4.144	6 0	34.6140
WHEN		Innapolis and Kings.	3. 4	103.7		00	.8 137.7 131	:	34.41	133.5 133			32. 2 132	0 01	134.9134
		helburne, Queens and Lunenburg,	2. 8	- PILOS . 6	9	8 109.8			.5 128.4 134.4 130.2 134	131.71	NG.	2 132 9 131	.9133.4132	73 8 172 1 160 0 100 0 100 0 172	34.
		Yazmouth and Digby.	1	2108.5		00	135.5 131	126.		130.81			31.91	72 1	133.1 134.
		rage for Province.	Ave	113.2	24.3	18.4	135.2	130.8	132.6 127	135.31	10		136.6 131	73 81	138.
YEAR ENDED JULY, 1904.	Nova Scoria.	Day of the year corresponding to the last day of each month. Jan. 31 July 212 Fcb 59 Aug 243 March 90 Sept 273 April 120 Oct 304 May 151 Nov 334 June. 181 Dec 365	For Leap year add one to each except January.	I Alnus incana, Willd	2 Populus tremuloides	3 Epigza repens, L	4 Equisetum arvense	5 Sanguinaria Canadensis	6 Viola blanda	7 Viola palmata, cuculiata	8 Hepatica triloba, etc	9 Acer rubrum	10 Fragaria Virginiana	11 " fruit rine	12 Taraxacum officinale
		erage for Province.	AV	106.9	118.	100.1	128.8	127.5	126.3	130.	122.3	128.8	127.7	161 9	131.6
		Inverness Slope to Gulf.	10.	3 108.5	125.	121.4	125.5	126.	129.6	133.6	:	36.	131.3	68.1	37.
		Bras d'Or Slope (Inv.	.6	1 109.3	119.	7 117.8	121.5	124.	129.5	.2 133.5 133	:	132.5 128.3 136	00	168.9 170 5 168	136.3 134.7 137.
EN.		Richmond and Cape Breton.	.8	112.1	119.7 119	115.7	132.2	:	130.	134.2	124.	32.5	133 6 132	68.8	36.31
20	on a	North Cumb., Col., Pictou and Antig.,	.7	4	115.	c.	00	130.9		4	118.	-			*
WEEN FIRST	RECIONS.	South Cobequid Slope (S. Cumbd Col.)	·9	6 110.9 114.9 103.8 107		115.8 113	133.6	5 130.	4 126.9 127.8	1 128.8 129	123.	27.3	2 127.3 129.6	4 161.9 154.	.6128.8133.7133.1132.
WHEN	-	Halifax and Guysboro.	.6	114.9	119.3 129.2 120	113.	134 4				:	31 1			33.71
		Hants and South Colchester.		110.9	119.3	99.5 103.7 113.	126.6	9	.52	27.2	29.	26.91	23.51	58.4	28.8
		Annapelis and Kings.	.5	98.6		99.2	132.5	:	25.5	26.8	13.51	24.91	23.41	57.51	27.61
		Shelburne, Queens and Lunenburg.	z	102.3 101.		98.3	125.9127.4132.5126.6134 4133.6128	:	120.5 121.6 125.5 125.	124.5 126.1 126.8 127.2 136	126.5 113.5 129.	127.1 127.1 124.9 126.9 131 1 127.3 127.1	122.1 124.2 123.4 123.5 130	158.1 159.5 157.5 158.4 152	27.4 127
		Yarmouth and Digby.	. 1	3	10	92.9	3	:	0	40	-	=		=	125.5 127

FLOWERING AND OTHER PHENOCHRONS FOR THE PROVINCE OF NOVA SCOTIA.—(Continued).

			-	7-	-											
1	1	10. Inverness Slope to Gulf.	1		140	146 0	146 7	100	155			40	65.1	170 9	60.2	154.
		9. Bras d'Or Slope (Inv. and Victoria).	T		124 6	2	. 00	0 6		230	3 153 7 150	227 5 240		167 5	2 8	53.51
		8. Richmond and Cape Breton.	000		. 6	141			1		1156.3	236.				IQ.
MON.		7. North Cumb., Col., Pictou and Antig.,	41136 61120	6 130 7 141	131		. 6	. 2		220.8	90	90	90	M,	•	16.61
COMMON		6. South Cobequid Slope (S. Cumb. and Col.)	5 132 4	137 6	13.	9 00	1	223	43.8	221.5	9	224.5	154.6	4	00	63
Весомина	REGIONS.	5. Halifax and Guyaboro.	71147 5	139 8 137	195 2		60		-	247.	152.1	240.5	9	159.1 162	56.1	.4 148.3 145.6 153.1 147
11	1 =	4. Hants and South Colchester.	1137 7				141.5				45.9	203.	.3 151.9 157	163.	149.6156.1	45.6
WHEN		3. Annapolis and Kings.	41148.1		136.	-	100	:	146.6 146.	:	7 143.3	216.	151.3	158.21	.8 149. 1	48.31
		2. Shelburne, Queens and Lunenburg.	146.4	136.2	129.9	90	44	114.	2 147.	216.	1 142.7	217.	1-	4	46.8	47.4
		1. Yarmouth and Digby.	8146	_		141.2	.8 141.7		5 143.2	190.	7 139.1	204.2	148.6150	152.6158	148.2146	.6 150.4 147
		Average for Province.	141 8		-	143.6	144.8	9.712	149.5	223.	148.7	222.7	155.5	162.3	151.1	153.6
YEAR ENDED JULY 1904.	Nova Scotia.	Day of the year corresponding to the last day of each month. Jan. 31 July 212 Feb 59 Aug. 273 April 120 Oct 304 May 151 Nov 334 June 18. Dec 365 For Leap year add one to each	13 Erythronium Americanum.	14 Coptis trifolia	15 Claytonia Caroliniana	16 Nepeta Glechoma	17 Amelanchier Canadensis	18 ' fruit ripe.	19 Prunus Pennsylvanica	20 · fruit ripe.	21 Vaccinium Can. and Penn	22 " fruit ripe.	23 Ranunculus aeris	24 R. repens	25 Trill erythrocarpum	26 Rhododendron Rhodora
		Average for Province.	37.7	133.2	128.1	138.4	137.1	200.1	144.5	215.9	141.7	207.6	147.5	156.9	145.9	145.1
		Gulf.	-	6	9.	C.	_		=		60		4	-		
		9. Bres d'Or Slope (Inv. and Victoria). On Inverness Slope to	-	7.6 137	9.6 133	3.5 141	6.4 141	3.6 182	1.4 149	5.	9.5 151	2.5 231	5. 158	3.5 163	7.3 153	9.5 151
		Breton.	7.	7.1 137	28.3 129.	38.2 143	44.6 146	85. 203	51. 151	5. 225	48. 149	222	54.3 155.	62.6 163.	55. 147	53. 149
SEEN.		7. North Cumb., Col., Pictou and Antig.	10.0137	134.3 137	-	-9-	60	00	4	2.3 225	00	5.7	2	.31	5	4
FIRST	REGIONS.	6. South Cobequid Slope (S. Cumb. and Col.)	128.2 130.9		128	135.6 141	135.3 136.	216.5 195	141	216.5212	0.614	3. 205.	144.2 146	0.7 15	0. 143	2.3 144
WEEN FIRST SEEN	RE	5. Halilax and Guyaboro.		32.3	131.4 126		142. 15	240. 21	151.2 138	243. 21	13.114	232.6 223	19.	8.5 15	17.1	145.
*		4. Hants and South Colchester.	31.21	32.1	125.	31.31				61	39.61		43.71	20.116	13.417	141.3 146.
		3. Annapolis and Kings.	38.51	32.91	130.	37.61	35.7	. 081	.4 141.5 142.	:	36.41	91.7	10.7	52.51	43.3	
		2. Shelburne, Queens and Lunenburg.	140.9 138.5 131.2 156.	129.6 132.9 132.1 132.3 133.	125.	137.7 137.6 131.3 139.	.1 136.8 135.7 136.			209.7	.7 134. 4 136. 4 139. 6 143.1 140.6 142	89.51	44.31	51.71	45.71	41.7
		I. Yarmouth and Digby.	139.	125.41	124.	::	137.1	:	5	180. 2	131.71	178.7 189.5 191.7 194.	139.1 144.3 140.7 143.7 149.	147.1 151.7 152.5 150.1 168.5 150.7 159	141.5 145.7 143.3 143.4 147.1 140.	138.8 141.7 143.

FLOWERING AND OTHER PHENOCHRONS FOR THE PROVINCE OF NOVA SCOTIA - (Continued).

			-8-
-	1	10. Inverness Slope to Gulf,	157.8 154.9 158. 174.6 177.4 163.5 163.5 177.4
		9. Bras d'Or Slope (Inv. and Victoria).	8 156. 215. 215. 1162 5. 176. 176. 186. 186. 174.61 174.61
		8. Richmond and Cape Breton.	2 157.81 6 157.1 1 4 172.1 1 4 172.1 1 172.1 1 172.1 1 173.9 1 173.9 1 173.9 1 173.9 1 173.9 1 173.9 1 173.9
MON.		7. North Cumb., Col., Pictou and Antig.,	1.5 219.9 1.4 154.5 157.157.6 157.7 1.7 157.6 157.7 1.7 153.4 172.2 1.8 156.7 170.2 1.8 156.7 158.2 1.9 156.7 170.2 1.9 156.7 170.2 1.9 156.7 170.3 1.9 156.7 170.3
COMMON		6. South Cobequid Slope (8. Cumb. and Col.)	6 149 9 152 6 224 5 219 3 154 4 154 1 156 7 157 3 165 7 163 5 162 5 159 9 167 165 8 167 3 169 1 151 8 156 1 170 7 174 1 165 1 162 1 165 1 169 1
COMING	REGION	5. Halifax and Guyaboro.	153.6 156.3 165.3 165.3 165.3 167.3 167.3 167.3 167.5 167.5 167.5 167.5 167.5 167.5 167.5 167.5 167.5 167.5 167.5 167.5
VEEN BECOMING	=	4. Hants and South Colchester.	4
T.E.		3. Annapolis and Kings.	7 153 4 163 4 163 4 163 4 163 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
		2. Shelburne, Queens and Lunenburg.	
		I. Yarmouth and Digby.	20150.4155 20150.8155 2150.8155 16153.3168 1615.8155 1617.8168 1617.8168 162.8169 165.3169 165.3169 165.3169 165.3169
		Average for Province.	150.5 154.2 154.2 157.5 165.4 164.7 164.7 168. 174.3 167.3 163.
VEAR senson from 1004	Nova Scotia.	Day of the year corresponding to the last day of each month. Jan. 31 July 212 Reb. 50 Aug 273 April 120 Oct 374 April 120 Oct 374 April 150 Oct 374 June 181 Dec 364 For Leap year add one to each except January.	27 Cornus Canadensis 28 " fruit ripe. 29 Trientalis Americana 30 Clintonia borealis 31 Calla palustris. 32 Cypripedium acaule. 33 Sisyrinchium angustifolium. 34 Linnsa borealis 35 Kalmia glauca 36 Kalmia glauca 37 Crategus oxyacantha 38 Crategus coccinea, etc. 39 Iris versicolor.
		Ачетаgo for Province.	147.2 212.6 148.5 151.5 153.5 162.9 162.0 161.1 162.0 162.1 162.0
		10. Inverness Slope to Culf.	2152.1 149.8 5155. 168.5 6 168.5 6 172.6 173.2 173.2
		9. Bras d'Or Slope (Inv. and Victoria).	d
2		8. Richmond and Cape Breton.	162.9 151 153.8 154 156.4 156 161 167.3 167 162.9 163 167.3 171 165.3 156 174.5 180 170 164.7 166 170.3
r See	ø	7. North Cumb., Col., Pictou and Antig.	4 4 6 1 1 6 8 8 8 8 8 8 7 7 8
FIRS	RECIONS.	6. South Cobequid Slope (S. Cumb. and Col.)	143.5 147.4 205.4 149.4 147.9 152.5 151.1 155.7 155.2 164.1 162.8 145.6 149.8 174.8 169.3 170. 157.8 158. 151.7 161.3 163.7
WEEN FIRST SEL	1	5. Halifax and Guyeboro.	3 144.3 143.5 147.2 2020.5 216. 205.5 216. 205.5 216. 205.5 216. 205.5 216.5 215.5
		4. Hants and South Colchester.	146.3 146.5 147.2 147.2 157.4 149.9 157.4 160.2 167.4 167.4 167.4 167.4
		3. Annapolis and Kings.	205. 247.2 220.5 216. 205 144.3 146.5 148.8 149.4 147 150.6 143.8 156.6 152.5 151 162. 147.2 159.3 159.5 159 152.2 154.7 159.4 155.7 159 154.9 149.9 159.4 159.3 159 154.9 149.9 159.4 159.3 159 159.3 157.4 163.1 164.1 162 148.9 146.2 154.8 145.6 149 166.7 167.4 163.1 174.8 169 157.7 155.5 163.6 170. 157 152.6 153. 153. 158. 151. 162.6 160.9 167.2 161.3 163.
		2. Shelburne, Queens and Lunenburg.	2 2 2 4 2 2 2 2 C C C 2 4 2 F
		1. Yermouth and Digby.	143.81445 182.5201 147.6150 159.7150 150.5151.6 159.6156 159.6166 159.6166 159.6166 159.6166 159.6166 159.6166 159.6166 159.6166 159.6166 159.6166

FLOWERING AND OTHER PHENOCHRONS FOR THE PROVINCE OF NOVA SCOTIA - (Continued).

				,,	-											
	1	ot sqops Slope to Gulf.	173.6	7 173.5	234.	. 181	177.5	268.	:			:	:	8 146.1	3 148.1	230.
		9. Bras d'Or Slope (Inv.	173.6		227.	180.	8178.	244.	187.	186.5	192.	7174.5		149.81	153.31	200.
		8. Richmond and Cape Breton.	3174.2	4171.2	:	176.2	.7 176.8	:		181.7			91.		152.7	
flow.		7. North Cumb., Col., Pictou and Antig.	5 170.3		238.7	181.9	7 174.7	249.7	175.5 180	178.	181.9 176	177.6 177	174.2 191	143.9 153	144.31	12.1
BECOMING COMMON		6. South Cobequid Slope (8. Cumb. and Col.)	3,172.5	.8 160.9 168	227.	8 153.	4 165.7	252.52	6 175.7 1	165.51	6 179.	0	176.	141.41	90	215 5 212.
OMING	REGION	5. Halifax and Cuyeboro.	2,170.3	167.8	236	180.8	170.4	247.5	153.6	-		175.7 172	:	50.5	50.7 144	238. 2
	M	4. Hants and South Colchester.	165.2	161.4	225.5	177.1	10	252.52	:	178.	180.6184	170.71	179.5	6 139.1 150.5	43.9150	191. 2
WHEN		S. Annapolis and Kings.	170.3	166.6	216.	6 180.	.3 169.3 164	239.	67.	3	.3 182.	1-	179.51	145.61	146.2 143	:
		2. Shelburne, Queens and Lunenburg.	165.3	162.5	219.	176.6	171.3	253.	167.3 167	175.7 178	178.31	168.3 175	182.7	145.71	16.4	. 66
		1. Yarmouth and Digby.	70.3	162.8	220.5	172.5	rĢ	2 236.3	100	178.		170.71	167.31	144.91	141.21	194.5 199.
		Average for Province.	170.5170.3	6.99	227.12	175.91	171.6167	249.22	172.1 171	42.21	181.6180	173.71	178.6	146. 1	147.21	211.1
YEAR ENDED JULY, 1904.	NOVA SCOTIA.	Day of the year corresponding to the last day of each month. Jan. 31 July 212 Aug. Feb. 50 Aug. 242 Aug. March 50 Sept. 273 April. April. 120 Oct. 334 June. For Leap year add one to each except January.	41 Nuphar advens	42 Rubue strigosus	43 " fruit ripe	44 Rhinanthus Crista-galli	45 Rubus villosus	46 " fruit ripe	47 Sarracenia purpurea	48 Brunella vulgaris	49 Rosa lucida	50 Leontodon autumnale	51 Linaria vulgaris	52 Trees appear green	53 Ribes rubrum(cultivated)	54 " " (fruit ripe)
j		Average for Province.	164.9	160.6	217.5	172.7	166.	239.7	168.1	173.3	179.9	167.6	176.	136.8	141.8	203.4
		10. Invernees Slope to Gulf.	170.7	167.7	226.	176.2	.5175.	262.	:	:	181.	79.		139.4	7 142.3	226.
		9. Bras d'Or Slope (Inv.		160.5	222. 2	175.	5 171.5	230. 2	177.5	82.	187.51	172.6 170.5 179	:	$\overline{}$		208. 2
		8. Richmond and Cape Breton.	69.6 170	60.7	:	173.	172 51		174.5	178.6 182	187. 1	72.61	.061	140.6 140.	149.9 148	
SERN		7. North Cumb., Col., Pictou and Antig.	5 163.7	63.2]	. 1.90	173.41	9	40.4	8	10	(C)		7		, ro	194.6
FIRST	REGIONS.	6. South Cobequid Slope		156.7 163	217.5 206		59.11	41.52	69.	155.7 174	.2 173.1 176.	66.7	169.9 181	32.1,1	140.9139	205.31
WHEN FIRST	H	5. Halifax and Guyaboro.	61.3159.4163.8157.9166.8165		230. 2	175.2	162.1 165.2 162.4 159.2 165.4 159.1 167	241.5241.5240.	176.3 169. 169.			159.1 162.3 168.2 164.1 166.3 166.7 167	in a	38.2 135.2 135.3 132.9 140.7 132.1 133.8		230. 2
		4. Hante and South Colchester.	167.91	.7 155.3 158.8 150.7 161.	64	171.7 175	159.2		168. 1	171.6170.4 170.9 175.1 181	173.3 174.6 178.4 174.3 19	64.11	175.6	32.91	37.8 143	24
		3. Annapolis and Kings.	63.8	58.8	306.5		162.4	32.3	.2 151. 1	120.01	178.4	68.21	172.	35.31	38.31	
		2 Shelburne, Queens and Lunenburg.	159.4	155.3	195.8 206.5	164.6 172.1 170.	165.2	.7 227.2 232.3 246.		170.4	174.6	162.31	.2 176. 1	135.21	136.9 140.6 138.3 137	179.
		I. Yarmouth and Digby.	161.3	156.7	236.	164.6	162.1	227.72	165.1 161	171.6	173.3	159.1	167.21	138.21	136.91	181.

FLOWERING AND OTHER PHENOCHRONS FOR THE PROVINCE OF NOVA SCOTIA.—(Continued).

				-10												
		10. Invernue Slope to	1147.3		155.7	:	162.	159.6	174.5	173 2			193	126.1	137.7	130 0
		9. Bras d'Or Slope (Inv.	11151.7	00 01	3 160.2	.200	164.4	2 163.8	167.2	168.2	*	ΙĠ		131.3	143.	124 2
		8. Biehmond and Cape Breton,	× 154.1		157.3	225.	163.8	165.2	171.7	168.3	168.5			129.	137.71	130
MON.		7. North Cumb., Col., Pictou and Antig.	147		151.	214.1	152.1	148.4	1 160.1	6.5.9	66.5	_ œ	301.6	132.5	138.3	120 21
c Cox		6. South Cobequid Sl., e (S. Cumb. and Col.)	6146 6		150.7	219.	4 150 7	152.6	160.	160.27	162	175.9	208 5	:	:	
BECOMING COMMON	REGIONS	5. Halifax and Guyaboro.	151.6	210.	163 5	:	169.	161.2	4 168.5	166.5	166.5	180	:	124.2	132.6	192 4
HEN BE	-	4. Hants and South Colchester.	1146.		149.	220.	.3 150 9	151.5	.7157.4	159.7	6 160.3	180.3	200	132.5	135.9 138.9 132	6 141 9
WE		.3. Annapolis and Kings.	.7145.		145.3	150.3	147	150.5	158	167.9	163	178.5	196.	125.7	135.9	
		2. Shelburne, Quant.	31147.	202	151.8	206.	152.5	152.9	159.9	163.9	159.8	173.7	189.7	9 123.4	129.3	1.00
		I. Yarmouth and Digby.	143.	195.	145.1	3 228.	145.	151 5	6.158.21	159.7	154.	180.	189.	116.9	130.1	4 195 2
		Average for Province.	148.	214.9	156.9	210.3	155.8	155.7	163.6	165.3	164.6	1×0.6	198.7	126.8	135.9	134 4
YEAR ENDED JULY, 1904.	Nova Scotia.	Day of the year corresponding to the last day of each month. Jan. 31 July 212 Feb 59 Aug 273 March 90 Sept 273 April 120 Oct 304 May 151 Nov 334 June 181 Dec 365 For Leap year add one to each except January.	55 R. nigrum (cultivated)	56 " (fruit ripe)	57 Prunus Cerasus	58 " fruit ripe	59 Prunus domestica	60 Pyrus Malus.	61 Syringa vulgaris	62 Trifolium repens	63 Trifolium pratense	64 Phleum pratense	65 Solanum tuberosum	66 Ploughing (first of season)	67 Sowing	68 Potato-planting (first of season)
		Average for Province.	142.9	200.4	147.4	210.	151.1	150.5	157.6	157.3	155.7	157.2	176.8	119.3	128.4	126 6
		10. Inverness Slope to Culf.	141 9	228.	148.5		156.5	155.7	170.6	167.3	164.4	:	181	3 119.5	130.6	131.7
		9. Bras d'Or Slope (Inv. and Victoria).	149.2	213.	8 155.51	214.6	7,160.2	159.6	.3 162. 2	161.5	162.6	196.	189.	125.3	136.31	3 129
		8. Mchmord and Cape Breton.	148.3	:	152.8	218.	156.7	161.7	167	162.9	161.2	184.	-17	20.4	31.3	25.3
SEE	4	T. North Cumb., Col., Pictou and Antig.	140.5	5 201.1	146.	205.3	4 147 1	147.4					.7 190.6	126.9	3:2	32.8
WHEN FIRST	REGIONS	6. South Cobequid Slope	142.2		146.1		147.4	147.2	160.8 153.7 153.	151.3	6 153.2 156.9	164.4	197.7	24.	30.1	131.81
WHEN	I	5. ! califax and Guysboro.	142.2139.7140.1145 6142 2140	219.5214	144.5 138.9 142 9 160.9 146.1 146	:	144.7 157.6 147	3 143.6 144.3 155.4 147.2 147	160.8	50.4156.6156 5152.4157.9151.3156.2	157.6	9171.4173. 171.5164.4167.8	:	2 115.2 124.5 118.7 124.	.4124.5129.8126.1130.1131	2 123.7 129.1 125.3 131.8 132
		4. Hants and South Coichester,	140.1	:	142 8	200	144.7	144.3	151.	152.4	150.2	173.	205.	124.5	129.8	129.1
		B. Annapolis and Kings.	139.7	:	138.9		147.1.142.	143.6	51.1153.6152.3151	156 5	.6 154.6 150.2 157	171.4	.8 184	115.2	124.5	123.7
			es.	70	rů.		-	63	9.	9	9	Ch.	OC	N	4	63
		2. Shelburne, Queens and Lunenburg.	142	189	144	6	.7 147	43.5 146	153	156	44.3 151	173.8,169	175.5.181	104.2.114		119 2 118

FLOWERING AND OTHER PHENOCHRONS FOR THE PROVINCE OF NOVA SCOTIA.—(Continued).

		_	-11													
		10. Invernees Skips to Culf.	127.5	220.	254.5	278.3	:	:	:	:	:	:	:	:		
		9. Bras d'Or Slope (Inv. darioris).	131.61	218.	264.	274	:	:	:		:	:	:		:	
		8. Richmond and Cape Breton.	136 5	225.	.1271.	281.	:	:	:	:	:	:	:	:	:	
MOM.		7. Morth Cumb., Col., Pictou and Antig.,	145.2	200.5	257.1	278.9	:	:		:	:			:		
COM		6. South Cobequid Slope (S. Cumb. and Col.)	:	:	:	:	:		:	:	:		:		:	
BECOMING COMMON.	REGION	5. Halifax and Cuysboro.	140	5,218.1	6 253 3	.1257.2	:	:	:	:	:	:	:	*	:	
	#	4. Hants and South Colchester.	148.1	226	6 258.6	276	:	:	:	:	:	:	:	:	:	
WBEN		3. Annapolis and Kings.	131.	202 7	.2 249.6	270.9	:	:	<u>:</u>	:	:	:		:	:	
		2. Shelburne, Queens.	138.	186 3	2 247.2	.8 276.7		:	:	:	:			:	_:	_ :
		1. Yarmouth and Digby.	150.7	192.7	252 2	256	:	:	:	:	:	:	<u>:</u>	:	:	
		Average for Province.	138.7	211.	256.4	272.2	:	:	:	<u>:</u>	<u>:</u>	:	:	:	:	
July, 1904.	Scoria.	eorresponding to of each month. July 212 Aug 243 Sept 273 Oct 374 Nev 334 Dec 365 add one to each	g (first of season) 138.7 150.	9	:	:	ers		to whiten ground	to fly in air	Spring frost-hard	" hoar	.ms-high	low	frost-hoar	hard
YEAR ENDED JULY, 1904.	Nova S	Day of the year corresponding the last day of each month. Jan. 31 July 2 Heb 59 Aug 2 March 90 Set 2 April 120 Oct 3 June 151 Nev 3 June 181 Dec 3 For Leap year add one to eac except January.		70 Hay-cutting	71 Grain-cutting	72 Fotnto-digging	73aOpening of rivers	73bOpening of lakes	74aLast snow to	74b " to	75aLast Spring fo	q92	76aWater in streams-	q92	77aFirst autumn frost-hoar	. " d77
		Average for Province.	129.6	205.7	248.3	266.2	88.5	107.1	112.2	118.4	138.9	159.8	102.5	186.8	271.9	206.3
		10. Inverness Slope to Gulf.	114.8	213.5	247.2	269.9	100.2	113.3	114.9	129.6	137.3	157.	110.6	194.3	275.8	304.
		9. Bras d'Or Slope (Inv.	123.5	3 213.5	10	.8 276.	91.	.9119.	112.	122.	134.	163.	100.	243.	298.	
٠		8. Richmond and Cape Breton.	129 8	215.3	262.8 255	269	91.5	119	109.7 112	123.9 122	145.4.134	159.5 163	103.1 100	180.	285	30
SEE	a	7. North Cumb., Col., Pictou and Antig.	2 135.4	203.7	245.6	272.3	91.3	105 6	110.9	117.7	4 139.8	157.8	97.3	:	271.2	7,295.8
FIRST	RECIONS	6. South Cobequid Slope (S. Cumb. and Col)	2 138 .2	223.6 203	250.3	2 264.6 272	94.7	.2112.	114.1	8 119.9		131.7	86.5	200	258.7	289.7
WHEN	1	5. Halilax and Guysboro.	127.2	214.	253.5	273	92.8	112.2	111.	3 118.8	133.8 132.4 155	150.5 160.5 131	.9 167.	181	276.6	297.7
		4. Hants and South Colchester.	136.	.5215.8	239.8 250.1 253.5 250.3 245	.9270.1	80.3	.1102.	9 115.2 111	118.3	133.8	150.5	127.9	181.	3257.1	294.6
		S. Annapolis and Kings.	143.8 129.2 117.8 136		239.8	254	2 80.9	9 97.1	4111.8	1112.	9141.	.9 166.	90	:	272.3 257.4 240.6 257.1 276.6 258.7	.3 202.5 277.2 294.6 297.7 289.
		2. Shelburne, Queens and Lunenburg.	3 129 2	1.180.2.191	238	1.263.4	81.	96	11.2111.4	2111.1112	134.1 135.9 141	158.3 163.8	104.9	183.5 187.9	3 257	3 202.
		l. Yarmouth and Digby.	143.8	186.1	239.	248.1	81.4	93.3	11.5	11.2	134.	158.	0	183.	272.	297.3

PLOWERING AND OTHER PHENOCIACONS FOR THE PROVINCE OF NOVA SCOTIA - (Continued).

			1	2-												
		10. Inverness Blops to											:			
		"A. Braa d'Or Blope (Inv. , (ainotoi V bua					magher de artir								-	
		8. Richmond and Cape Breton.						-				-				
MON.		7. North Cumb., Col., Pietou and Antig.	1										-			-
COMMON		6. South Cobequid Slope (8. Cumb. and Col.)											-			
Весоміма	REGIONS.	8. Halifax and Guyaboro.							-							
	ä	4. Hanty and South Culchester.					:			:						
WHEN		3. Annapolis and Kings.	. :			:	•			:						
		2. Shelburne, Queens and Lunenburg.			:			- :	:	:	:			-		
		1. Yermouth and Digby.				:	:	:	:	:	:		-		:	
		Average for Province.		:			:	:	:	-	:		:			
YEAR ENDED JULY, 1904.	Nova Scotia.	Day of the year corresponding to the last day of each month. Jan. 31 July 212 Feb Feb 53 July 223 Ang 273 Ang 273 April 50 60 60 60 50 304	78aFirst mow to fly in air	78b " whiten ground	79aClosing of lakes	79b " Rivers	StaWild ducks migrating, N	81b · · · S	82a " geere " N	82b " 8	83 Melospiza facciata. North	84 Turdus migratorius	85 Juneo hiemalis	86 Actitis macularia	87 Sturnella magna	88 Ceryle Alcyon "
		Average for Province.	200.6	308.3	342.5	340.9	88.3	295.7	83.8	312 5	91.2	. 88.1	87.3	127.4	121.7	124.9
		or squisses Singe to tall, Oll	290.5	299.5	353.	354.1	90.3	306.	85.7	:	98.7	8.66	94.3	125.5	:	125.
		9. Brass d'Or Slope (Inv. and Victoria).	.8 314.		353.3	7.359.	916	350.	86.7	303.	. 96	90.7	92.		124.	126.5
.		8. Richmond and Cape Breton.	207.8	310.9316	348.	357.7	90.5	270.	82.7	283.	93.7	90.7	85.7	138.5 131	126.5 124	125.
SEEN	60	7. North Cumb Col., Pictou and Antig.	300.6	.8305.	348.4	348.4	89.3		81.7	7.315.7	92.1	80.8	91.5	134.3	121.	.5 123.2
FIRST	RECIONS	6. South Cobequid Slope (S. Cumb. and Col.)	299.1	299	335.	365.	96.1	287.7 312	85.5	337.7	97.8	87.3	94.2	130.8 134.	116.	.6 127.5
WHEN	-	5. Helifex and Guysboro.	298. 7 302. 2 299. 1 300.	320.3	:	. 247	84.1		82.7	:	88.4	86	86.2	121.3		117.6
		4. Hante and South Colchestor.	298.	6310.	332.7	341 5	80.2	243.	78.6	324.	87.5	36.2	89 6	124.4	128.3	7 125.7 117
·		3. Annapolis and Kings.	298 4		342.	:	86.4	100	86.38	5 336.	88.5	83.8	81.0	132.		126.7
		2. Shelbune, Queens and Lunenburg.	64	311.3304	338.3	354.8	86.	298.7 298.	88.9	283 5	83.8	84.7	88.1	108.8	114.5	.5 122.6 126.
l		1. Yarmouth and Digby.	205.9 200	306.7	332.		:	:	84.7	317.	85.	82.4	70.		:	29.5

PLOWERING AND OTHER PHENOCHRONS FOR THE PROVINCE OF NOVA SCOTIA - (Satinhad).

			_	13-	_										
		daysper Blope to	.01			:			:	:	:	:	:	:	
		.val) spold to hearff	6							:	:	:	:		
		Richmond and Cape Breton.	.8			:			:			:	:		
fox.		North Cumb., Col., Pictou and Antig.					:					:		:	
WHEN ВЕСОМІНО СОМИОИ.		South Cobequid Slope (8. Cumb. and Col.)	.0		:	:	:	:	:	:		:	:	:	
OMING	REGION	.orodevuD bas zalilaH	.8	:		:	:	:		:		:			
N BEC	R	Hants and South Colchester.		1		:			:	:	:	:	:	:	
WHE		Annapolis and Kings.	.8			:	:	:	:	:	:	-	:		
		Shelburne, Queens and Lunenburg.	·z	:	-				:	:		:	:	:	
		Yarmouth and Digby.	.1		:				:	:	:	:	:	:	: !
		erage for Province.	VA	:	:	:		:		:	:	:	:	:	
b Jul. 1904.	Nova Scotia.	corresponding to figure 213 Sept 243 Sept 273 Sept 273 Nov 334 Dec 304 Dec 305	add one to each anuary.	ronata	:	#q	ibris "	olinensis "	ryzivorus "	:	ticilla "	unna	rginianus "	f frogs	noe, snakes
YEAR ENDED JUL	Nova	Day of the year the last day of the May Keb 59 March 50 April 120 May 151 Vane 181	For Leap year add one to except January.	99 Dandrosca coronata	90 D. metiva	91 Zonetrichia alba	92 Trochilus colubris	93 Tyrannus Carolinensis	94 Dolychonyx orygivorus	95 Spinis tristis	96 Setophaga ruticilla	97 Ampelis cedrorum	98 Chordeiles Virginianus	99 First piping of frogs	00 First appearance,
YEAR ENDE	Nova	of the y		134.5 89 Dendroca co	134.6 90 D. metiva	119.4 91 Zonetrichia al	145.6 92 Trochilus colu	140.1 93 Tyrannus Car	133.8 94 Dolychonyx o	143.7 95 Spinis tristis	137.3 96 Setophaga ru	142. 97 Ampelis cedro	122.5 98 Chordeiles Vi	7 99 First piping o	116.2 100
YEAR ENDE	Nova		PAY	134.5 80	.5 134.6 90	. 119.4 91	. 145.6 92	. 140.1 93	133.8 94	7 95	137.3 96	97	5 122.5 98	2 6	7 116.2 100
YEAR ENDE	Nova	Gulf.	10°	8	137.5 134.6 90	.6 107. 119.4 91	. 145.6 92	.5144. 140.1 93	. 139. 133.8 94	143.7 95	.3	142. 97	122.5 98	2 6	7 116.2 100
	Nova	and Victoria). Inverness Blope to Ciult. Ciult.	10.	130.5 134. 134.5 80	.5 134.6 90	119.5 116.6 107. 119.4 91	6 92	. 140.1 93	133.8 94	7 95	. 150. 137.3 96	97	5 122.5 98	8	116.2 100
SE) N.	,	Breton. Bres d'Or Slope (Inv. and Victoria). Inverness Slope to Ciult. Ciult.	.9 .01	7.130.5 134. 134.5 89	.2 136. 126. 137.5 134.6 90	.9119.5116.6107. 119.4 91	6149. 142.6143. 145.6 92	.3151.5 141.5 144. 140.1 93	1141.2131. 139. 133.8 94	.8146. 132 143.7 95	7 140 134 150 137.3 96	.5 131 142. 97	. 117.0 105.5 122.5 98	.7 115.4 118.6 11; 7 99	7 116.2 100
First Sein.	,	Pictou and Antig. Richmond and Cape Breton. Bres d'Or Slope (Inv. and Victoria). Inverness Slope to Ciult.	.6 .9 .01	130.5 134. 134.5 80	.2 136. 126. 137.5 134.6 90	.9119.5116.6107. 119.4 91	6149. 142.6143. 145.6 92	.3151.5 141.5 144. 140.1 93	141.2131. 139. 133.8 94	146. 132 143.7 95	3139.7140. 134. 150. 137.3 96	5 153.5 131 142. 97	. 117.0 105.5 122.5 98	.7 115.4 118.6 11; 7 99	. 119.4 120.6 120.7 120 7, 116.2 100
SE) N.	REGIONS.	(S. Cumb. and Col.) North Cumb., Col., Pictou and Antig. Richmond and Cape Breton. Bread 'Or Slope (Inv. and Victoria). Invernees Slope to Culf. Culf.	.6 .8 .9 .01	140.5[136.7[130.5][134.] 134.5 80	136. 126. 137.5 134.6 90	119.5 116.6 107. 119.4 91	6149. 142.6143. 145.6 92	.3151.5 141.5 144. 140.1 93	. 121.7 138.1 141.2 131. 139. 133.8 94	150.4146.8146. 132 143.7 95	153.3 139.7 140. 134. 150. 137.3 96	138.5 153.5 131 142. 97	. 117.0 105.5 122.5 98	4 118.611; 7 99	. 119.4 120.6 120.7 120 7, 116.2 100
First Sein.	,	South Cobequid Slope (S. Cumb., and Col.) North Cumb., Col., Pictou and Antig. Richmond and Cape Bres d'Or Slope (Inv. and Victoria). Inverness Slope to Ciult.	.6 .8 .7 .7 .01 .01 .01 .01	7.130.5 134. 134.5 89	115.2 142.7 135.2 136. 126. 137.5 134.6 90	. 133.6 120.7 110.9 119.5 116.6 107. 119.4 91	6149. 142.6143. 145.6 92	.3151.5 141.5 144. 140.1 93	. 121.7 138.1 141.2 131. 139. 133.8 94	150.4146.8146. 132 143.7 95	153.3 139.7 140. 134. 150. 137.3 96	5 153.5 131 142. 97	. 117.0 105.5 122.5 98	. 115.5 110.9 108.7 115.4 118.6 11; 7: 99	. 119.4 120.6 120.7 120 7, 116.2 100
First Sein.	,	Colchester. Halifax and Guyeboro. South Cobequid Slope (S. Cumb. and Col.) North Cumb., Col., Pictou and Antig. Richmond and Cape Breton. Breton. Breton. Gulf. Inverness Slope to Culf.	.6 .6 .7 .9 .9 .01	140.5[136.7[130.5][134.] 134.5 80	115.2 142.7 135.2 136. 126. 137.5 134.6 90	. 133.6 120.7 110.9 119.5 116.6 107. 119.4 91	6149. 142.6143. 145.6 92	.3151.5 141.5 144. 140.1 93	7 138.1 141.2 131. 139. 133.8 94	150.4146.8146. 132 143.7 95	7142.3 100. 153.3 139.7 140. 134. 150. 137.3 96	148.2 138.5 153.5 131 142. 97	. 117.0 105.5 122.5 98	99.4107. 115.5110.9108.7115.4118.611; 7 99	. 119.4 120.6 120.7 120 7, 116.2 100
First Sein.	,	Hants and South Colchester. Halilax and Guyeboro. South Cobequid Slope (S. Cumb., Col., North Cumb., Col., Pictou and Antig. Hictou and Antig. Hicton and Cape Breton. Area d'Or Slope (Inv. and Victoria). Invernees Slope to Louil.	.6 .6 .6 .6 .6 .6 .6 .6 .6 .6 .6 .6 .6 .	140.5[136.7[130.5][134.] 134.5 80	.2 136. 126. 137.5 134.6 90	.9119.5116.6107. 119.4 91	149. 142.6.143. 145.6 92	151.5 141.5 144. 140.1 93	. 121.7 138.1 141.2 131. 139. 133.8 94	4 146.8 146. 132 143.7 95	153.3 139.7 140. 134. 150. 137.3 96	.2 138.5 153.5 131 142. 97	5 122.5 98	. 115.5 110.9 108.7 115.4 118.6 11; 7: 99	.4 120.6 120.7 120 7 116.2 100

THUNDERSTORMS-PHENOLOGICAL OBSERVATIONS, NOVA SCOTIA, 1903.

The indices indicate the number of stations from which the Thunderstorms were reported on the day of the year specific.

	9 4		a		ă-			3		
pu	Shelb'ne, Queens and Lunenburg.	P	Cont		Cobequid Slope. Cum. & Col.)	North Cum., Col. Pictou & Antip.	Richmond and Cape Breton.	Bras "Or Slope (Inv. & Victoria)	Slope	Province of
Yarmouth and Digby.	200	Annapolis and Kings.	0 :	P.	E 23	An.	A C	is is	S	9 8
÷ i	ne e	i	In ite	2 5		an age	2 2	5>	3.	i i
J	a s	od zi	Hants and Colchester.	Halifax and Guysboro.	e d u	D C	200	7.44	Inverness to Gulf.	2 8
Edg	d e	n d	lei	li k	30	123	नु ह	3 F	G	£2
Yarmot Digby.	S. Car	A.	E 3	E3	3.0	P.S.	23	85	73	YES
-1	어	ರ್ಥ	4	ເລ່	9	14	αť	œ.	ď.	1908
	183*			199	183	19913			;	183
184	20703		184	183 1842		18313 18410			184	184
	188					1892	188	189		188
						1892		189	i	189
• • •	101					190	* 1 1	191		190 191
	101					1922		101		192
								193		193
						194				194
				197 199		197 199 ²				197
				199		200		200		202
203						200		200		203
				201		204				204
						208				208
	223					215				215
	2274			22		2272				227
	2283			228		99×15		228		228
	22910		2304	227 228 229 ²	229	22927		229	229 230	229
	230	2304	2304		2306	23011			230	230
	2328		201			231 ³ 232				231 232
	233				23312	2332				233
		2344	2344	234	23312 2342	23410	2342			231
		2353	2353		2353	2357				235
					2363		237			236
• • • • •			238			238	201			238
				2392		23910				239
2422	240		2402		240	2404	240			240
2422	242		2434	24310		2433	243	243		242
	243 ² 244		2434	24310	· · · · · · · · · · · · · · · · · · ·	2433	243	243		243 244
	611					215	611	1		243
									246	246
							1		247 248	247
248 ² 249	24912 24912	2497 2497	2487 2496	24815	2498	21823	248	248		248
	2502	249	2504		2490	24921 25014	249	250		24v 250
251	2512		2514	251 ²	2512	25118	251	200		251
						2523				252
		·				254				254
259		······				259	256		0*0	256 259
2019		(260			259	260
						261				261
									263	263
266 267										260
Zu!	!		207							267

THUNDERSTORMS-PHENOLOGICAL OBSERVATIONS, NOVA SCOTIA, 1908

The indices indicate the number of stations from which the Thunderstorms were reported on the day of the year specified.

OBSERVATION STATIONS.

1. Yarmouth and Digby.	2. Shelb'ne, Queens and Luneuburg.	2. Annapolis and Kings.	4. Hants and South Colchester.	5. Halifax and Guysborv	6 S. Cebequid Stope (S. Cum. & Col.)	7. North Cum., Col., Pictou & Antig.	8. Richmond and Cape Breton.	9. Bran d'Or slope (Inv. & Victoria).	10, Inverness Stope to Gulf.	Sault Province of Nova Scutia
270						2716			271	270 271 ⁷
						272			272	2722
						273		[++++]		273 278
				278 279		1	1	1		279
				280						280
						281				281 282
2853	. 282 28 5 4			2882					1	2859
289	289					2904		٠		21492
2907	290s 2912	2905	290		2912	29(15				29114
2915	AMMO		2092	:5994	201-					2947
						. 304	1			304 306
010	3102			306			1	1		3108
310	910-		3112	3119		3118	311	311	311	31122
				312		. 3124	3122	312	312	3129
						318	3212			318 3213
				3224		3229	399	322	322	32216
				. 044		323	Own			323
						. 324				324
						. 328				328 341 ²
						. 3413			360	360
	*******								300	900

YEAR 1904.

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					1				4
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38 .	.								
						54			
	-					56			
;	1			60		60	1		
1	A12								
	6248		623	6218		624			
0014		4910	6319	636	6319	6360	A92		63
6316	6310	6310			00.0	646	64	64	
64 .			64	64			02	02	
						66			
			67						
			683						
	70 .						1		
71				71		71			
	1		•	72					
73							1		
10		******		74	1		1		
PT-7			1	14		77	1		
11							1		

THUNDERSTORMS-PHENOLOGICAL OBSERVATIONS, NOVA SCOTIA, 1904,

The indices indicate the number of stations from which the Thunderstorms were reported on the day of the year specified.

Yarmouth and Digby.	Shelb'ne, Queens and Lunenburg.	Annapolis and Kings.	Hants and South Colchester.	Halifax and Guyshoro.	S. Cobequid Slope (S. Cum. & Col.)	North Cum., Col., Fictou & Antig.	Richmond and Cape Breton.	Bras d'Or Slope (Inv. & Victoria	L Inverness Store to Gulf.	Province of Nova Scotia.
-	અં	rri	-	ıd	4	1-2	ගේ	s	2	1904,
83¢	82H 83					MH2				81° 82° 82° 81°
		41414			92					92
	• • • • • • • • • • • • • • • • • • • •					94		116		989 94 95
972 1022 10314	101 ¹⁷ 102 ⁴ 103	1014 10215	101 102	103	10213	101 ² 102 ²⁷ 103 ²		103	101	10126 10126 101264
104							1094	109		104 109 ^a
	1111				1102					1102
			114			112		• • • •		111 112 114
			120	120		119 120s	120	1205	117 120s	117 119 12018
*****		1217	12112	122	12112	121** 122° 123				12179 1224
					124	12412	• • • •		• • • • • ;	123
						125				125
						126 128 ²		198		126 ² 128 ³
								128	129	129
	******		197	130	• • • • • • •	130 137 ²				1302
******			137 138	138						1374 1382
						140 14115				140
								1443	1444	14116
1456			1454	145		145 146	146		1444 145	14516
146	146 117 ²			4 4 6 6		146	146	1473		14611
	1485			1477	1482	147 ⁴ 148 ⁵	147 ⁸ 148 ¹²	I'E'	1485	14829
	150						1493	149		1494
	150 .					1512		151	151	150 1514
				154	154	155			101	1542
156	150		155 . 156 .			155	1552			1554
157	156 1574		156 .				157			1568 1576
158						158				1582
161						162				161
	* * * * * * .					10%				162

THUNDERSTORMS-PHENOLOGICAL OBSERVATIONS, NOVA SCOTIA, 1904.

The indices indicate the number of stations from which the Thunderstorms were reported on the day of the year specified

1. Yarmouth and Dicky. 2. Shelb'ne, Queens and Lanenburg.	2. Annapolis and Kings.	4. Hants and South Colchester.	5. Halifax and Guysboro.	d. S. Cobequir' Slope (S. Cura. & Col.)	7. North Cum., Col., Pietou & Amiga.	R. Richmond and Cape Breton.	9. Bras d'Or Slope (Inv. & Victoria)	10. Inverness Sleps to Gulf.	Tevince of con Scotia,
169 1673 169 170 170 1743 1743 174 1775 1779 181	1099 1702	165 167 ² 168 ³ 168 ³ 170 ¹² 171 ² 173 ¹² 174 ⁷ 176 177 ³ 178 181 182	168 1674 1684 1735 1742 176 178	163 1684 1709 172 1739 1742 177 1782	1032 107 1089 109 170m 171, 1728 17422 17413 1754	1702	168 170 178 174	1652 167 168 169 1704	1695 164 165- 168 16711 168-62 16914 1716-17 17210 17210 1725 1745 17614 17612 17710 1784 1781 1781 1781 1781 1781 1781 1781

PHENOLOGICAL OBSERVATIONS, CANADA, 1904

" WHEN FIRST BEER."

OBSTRUCTION STATIONS.

-			-							
	Day of the year 1903 corresponding to the last day of each month.			5				1		
Culler	Jan	ere dates fores fores Scotia	St. John, N.B.	Charles 'yes, P.K.L.	Kens AR. P.R.L.	Ottawa, Ont.	recmete, Out.	Buelph, Onc.	dibensk, Sask.	securer, B.C.
×	January.	1	*	0	12	5	5	-	6	-
*1	Alnus incana, Wilid	106,9	118	110		114		117		76a
3	Populus tremuloides	118.	125	132		110	126	128		
3	Epigma repens, L	109.1	1:5	190	1:6	116				
4	Equiectum arvense	128.8		++++	131	1126	*****	127		109
5	Sanguinaria Canadensis	127,6				124		117		
-	Viola blanda	126.8	131		127	†197	142	129		
7	Viola palmata, euculiata	130	130		134	13)	134	131		
8	Hepatica triloba, etc	122 3	123		11.	107	126	123		
9	Acer rabrum	128 €	125	152	106			125		1006
10	Fragaria Virginiana	197.7	131	146	134	127		132		
*11	(fru.tripe)	161 9	162			***				
12	Taraxacum officinale	181.4	139	135	130	127	130	113		
13	Erythronium Americanum	137.7	125			122	126	117		
14	Unptie trifolia	133.2			137	†133		144		
15	Ciagtonia Caroliniana	128,1				115		117		
16	Nepeta Glechoma	138.4				†133				108
17	Amelanchier Canadensis	13/.1	159		139	138		132		
18	" ((ruitripe)	200.1								
19	Prunus Pennsylvanica	144.8	149	*******	15	1 2	142			1140
20	60 (fruit ripe)	215 9								
21	Vaccinium Can. and Penn	141.5	146 .		148	135		135		80
22	(fruit ripe)	207.6								
23	Ranunculus acris.	147 5 .			156			151		184
24	R. repens	156 9			17.					128
25	Trillium erythrocarpum	145 9	139		141	127				
26	Rhododendron Rhodora	145 1	139		151					
27	Cornus Canadensis	147 2			147	152		163		133
28	" (fruitripe)	212.6								. 50
29	Trientalis Americana	148 5	146		159				148	****
30	Clintonia berealis	151 5	149		160			148		
31	Calla palustris	158 5 .			131	-		165		
				1	1					

^{...} Alaus subrum; b. Acor macrophylium; c. Pranus emarg nata... † When becoming common, except 1 and 11.

PHENOLOGICAL OBSERVATIONS, CANADA, 1904.

"WHEN FIRST SERS."

July	167 166. 164. 9 160. 6	149	Oberlotteen, P.E.I.	168 173 166 173 175 167	145	1Ones Out,	156 163 148 169 162	Sheffbreeks, Sask.	Vascouver, B.C.
Aug. 348 Bopt. 378 Oet 380 New 348 Dee 380 ne to each except r7.	. 167 158. 162 1 157 7 164.6 164.8 166.6	149	161	168 172 168 173 166 173 175 167	145	fOrest Oat,	163 143 148 188 169	Sheffleresha, Bask.	Vancourer, B.C.
ifolium	. 167 158. 162 1 151 1 170,1 162. 157 7 164.6 104.8 166.8	149	161	172 166 173 173 175 167	145	- Q	163 148 148 169		
ifolium	158, 162 1 151 1 170,1 162, 157 7 164.6 164.8 166.9	149	161	172 166 173 173 175 167	145		163 148 148 169		
ifolium.	158, 162 1 151 1 170,1 162, 157 7 164.6 164.8 166.9	149	161	172 166 173 175 167	145		163 148 148 169		
aathemum	162 (151 1 170,1 162, 157 7 164,6 164,8 166,9	149	1	166 178 175 167	149		148 148 188 169		
anthemun	151 1 170,1 162. 157 7 164.6 164.8 166.9	149	1	179 175 167	149		148 148 188 169		
anthemun	170,1 162. 157 7 164.6 164.6 166.9	169	1	172 175 167	149		148 188 169	****	
a	162, 157 7 164,6 164,8 164,9 160,6	162	1	175	181		188 169		
aathemum	164.6 164.6 164.6 166.6	162	1	167	181	****	188 169	*****	
anthomem	164.6 164.8 164.9 160.6	162	1	167	181		188 169	****	
natheman	164.8 164.9 160.6	****	*****	167	181	*****	169	• ••	
	166.6		****		181	*****		* **	
	160.6					*****	162	***	
				2 (84)					
			*****	110	151	****	155		748
	217.5	*****	****		877		*** *		152:
		70.4	*****	****					
			****	****			160		
	-		****						
		****					158		
				179			178		****
		****					197		
	167, 6	****		161		***			
	176				****				
	136.8				197b	146			100
	141 8								
	203 4								
	142 9			148					
	219 4								
	147 4		149	150					104
e) s	210								
	151.1			146	129				108
	10 5		149	146					112
	57.6		161	158					125
1	57 8								125
	1)	166 239 7 288 1 239 7 268 1 273 3 279 9 270 167, 0 270 176 28 136 8 291 4 291 147 4 291 151 1 210 5 217 5	166 239 7 168 1 173 3 179 9 167 6 186 8 141 8 19). 203 4 142 9 19). 210 151 1 170 5 157 6	ii	ii	ii	ii	11 179 7 166 160 1590) 239 7 168 1 158 173 3 179 178 179 9 197 167,6 161 136.8 127b 146 141 8 141 8 10) 203 4 142 9 148 19) 210 151.1 146 129 167.6 161 158	ii

d. Rubus spectabilis.

* When becoming common.

† When becoming common.

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PHENOLOGICAL OBSERVATIONS, CANADA, 1964.

"WHEN FIRST SEEN."

OBSERVATION STATIONS.

=	Obes!	NVA TI	OR ISTA	CTIONS	•	-				
Number	Day of the year 1903 corresponding to the last day of each month, Jan	Average dates for Nova Scotia,	John, N.B.	Charlottetown, P. B. I.	Kensington, P.E.L.	Ottawa, Ont.	Greemare, Ont.	Guelph, Out.	Shellbrooke, Sask.	Vancouver, B.C.
Nu	January.	A	30	Cha	Ken	9	Ore	Gue	le g	Y Bu
68	The Later Land		-	-	-	-	-	-	-	-
64	Trifolium pratense	155,7			159	†128				140
65	Solanum tuberosum	157.2								
66	Ploughing (first of season).	176.8		****			188		*****	
67	Sowing " "	119.3			124		• • • • • • • • • • • • • • • • • • • •			
		128.4			127		•••••	•		
68	a common pranting	126 6	* * * * *				145		131	*****
69		129.6					144			****
70		235.7			0		194		196	
71		248 3					202			10000
72	Potato-digging "	266 2		• • • • • •	276					
73:		88 5		103						
7	Opening of lakes "	107.1								
748		112 2		••••		••••				82
74b		118.4			117					82
75a	Last spring frost-hard	138 9			97					
75b	hoar	159 8	163	126	124					****
76a	Water in streams—high	102.5					107			
76b	16 ti low	186.8								
77a	First autumn frost-hoar	271.9		252	252		257			
77b	" hard	296.3	281		280					
78a	First snow to fly in air	299.6		262	301					
78Ъ	" whiten ground	308.3			306					
79a	Closing of Lakes	342.5								
70 b	" Rivers	340,9		344					i	
81a	Wild ducks migrating, N	88.3					124	123		
81b	· · · · · · · · · · · · · · · · · · ·	295, 7								
82:1	" geess " N	83.9		69					94	
82b	** ** S	312.5		260						
63	Melospiza fasciata, North	91.2		88	92	85	86	83		
84	Turdus migratorius "	88.1		90	92	84	85	88	111	
85	Junco hiemalis	87.3		90	92	93	90	Res.	111	• • • • •
	MO Thundesptorms				32	99		Aves.		

80 Thunderstorms: Charlottetown, P.E.I.: -63, 121, 141, 148, 202, 210, 231, 262, Kensington, P.E.I.: -63, 121, 148, 170, 182, 202, 230, 242, 262, Creemore, Ontario: -129, 194, 202, 246, 255, 273.

PHENOLOGICAL OBSERVATIONS, CANADA, 1904.

"WHEN FIRST SEEN." OBSERVATION STATIONS.

Number		Average dates for Nova Scotia,	St. John, N.B.	Charlottetown, P.E.L.	Kensington, P.E.I.	Ottawa, Ont.	Croemore, Out.	Guelph, Ont.	bhellbrooke, Sask.	Vancouver, B.C.
86	Actitis macularia, North	127.4				-	-	-	-	-
87	Sturnella magna "	121.7				*****		120	,	
88	Ceryle Alcyon "	124.9			**	93		83	112	
89	Dendræca coronata "					114		97		,
90	D. mativa		****			4.		120		
91	Zonotrichia alba	134.6				128		126		
92	***************************************	119 4						146		
	************	145.6							*****	
98	Tyrannus Carolinensis'	140 1						141		
94	Dolychonyx oryzivorus"	133 8						126		
95	Spinis tristia	40 0	1	•••••	••••			124		
96	Setophaga ruticilla 4						151 1	Ren.		
97	Ampelia cedrorum	37.3 .				128		140		
1	111 11111111111111111111111111111111111	42						147		
	Chordeiles Vriginianus ** 1	22 5		149		- 1				
98	First piping of frogs 16	8.7		114 1				155	• • • • • • • • • • • • • • • • • • • •	
00	First appearance of snakes	6.2				108	112		113	
-			***	1	68		93		111	